

WHAT IS CLAIMED IS:

1. An electrostatic spraying device being configured and disposed to electrostatically charge and dispense a product from a supply to a point of dispersal, wherein said device comprises:
 - a reservoir configured to contain the supply of product;
 - a nozzle to disperse the product, said nozzle being disposed at the point of dispersal; said nozzle having an exit orifice;
 - a channel disposed between said reservoir and said nozzle, wherein said channel permits the electrostatic charging of the product upon said product moving within said channel;
 - a power source to supply an electrical charge;
 - a high voltage power supply, said high voltage power supply being electrically connected to said power source;
 - a high voltage electrode, said high voltage electrode being electrically connected to said high voltage power supply, a portion of said high voltage electrode being disposed between said reservoir and said nozzle, said high voltage electrode electrostatically charges the product within said channel at a charging location; and
 - a high voltage shield substantially surrounding said reservoir, said high voltage shield being conductive.
2. The electrostatic spraying device of Claim 1, wherein said high voltage shield is selected from one of the group consisting of: a conductive plastic high voltage shield and a metal high voltage shield.
3. The electrostatic spraying device of Claim 1, wherein said high voltage shield is an integral part of the reservoir.
4. The electrostatic spraying device of Claim 3, wherein said reservoir is part of a removable cartridge.
5. The electrostatic spraying device of Claim 1, further comprising a valve for preventing backflow into said reservoir.

6. The electrostatic spraying device of Claim 1, wherein said high voltage shield forms a wall of said reservoir.
7. A cartridge configured to contain and deliver a product for use with an electrostatic spray device comprising:
 - a reservoir configured to contain the product;
 - a nozzle to disperse the product, said nozzle having an exit orifice;
 - a channel disposed between said reservoir and said nozzle, wherein said channel permits the electrostatic charging of the product upon said product moving within said channel;
 - a high voltage contact for receiving power from the electrostatic device;
 - a high voltage electrode electrically connected to said high voltage contact, said high voltage electrode being configured to charge the product for dispersal from said nozzle; and
 - a high voltage shield substantially surrounding said reservoir, said high voltage shield being conductive.
8. The cartridge of Claim 7, wherein said high voltage shield is selected from one of the group consisting of: a conductive plastic high voltage shield and a metal high voltage shield.
9. The cartridge of Claim 7, wherein said high voltage shield is an integral part of the reservoir.
10. The cartridge of Claim 7, further comprising a valve for preventing backflow into said reservoir.
11. The electrostatic spraying device of Claim 7, wherein said high voltage shield forms a wall of said reservoir.
12. An electrostatic spraying device being configured and disposed to electrostatically charge and dispense a product from a supply to a point of dispersal, wherein said device comprises:
 - a reservoir configured to contain the supply of product, said reservoir having a volume;

a nozzle to disperse the product, said nozzle being disposed at the point of dispersal; said nozzle having an exit orifice;

a channel disposed between said reservoir and said nozzle, wherein said channel permits the electrostatic charging of the product upon said product moving within said channel;

a power source to supply an electrical charge;

a high voltage power supply, said high voltage power supply being electrically connected to said power source;

a high voltage electrode, said high voltage electrode being electrically connected to said high voltage power supply, a portion of said high voltage electrode being disposed between said reservoir and said nozzle, said high voltage electrode electrostatically charges the product within said channel at a charging location,

wherein the device has a volume available to contain the product between said high voltage electrode and said nozzle exit orifice, said volume being selected from one or more of the group consisting of: less than about 20 percent of the volume of a designed product application, and less than about 10 percent of said volume of said reservoir.

13. The electrostatic spraying device of Claim 12, wherein said channel has a ratio of a length of said channel from said high voltage electrode to said nozzle exit orifice of less than about 1.

14. A cartridge configured to contain and deliver a product for use with an electrostatic spray device comprising:

a reservoir configured to contain the product, said reservoir having a volume;

a nozzle to disperse the product, said nozzle having an exit orifice;

a channel disposed between said reservoir and said nozzle, wherein said channel permits the electrostatic charging of the product upon said product moving within said channel;

a high voltage contact for receiving power from the electrostatic device; and

a high voltage electrode electrically connected to said high voltage contact, said high voltage electrode being configured to charge the product for dispersal from said nozzle,

wherein the cartridge has a volume available to contain the product between said high voltage electrode and said nozzle exit orifice, said volume being selected from one or more of the group consisting of: less than about 20 percent of the volume of a designed product application, and less than about 10 percent of said volume of said reservoir.

15. The electrostatic spraying device of Claim 12, wherein said channel has a ratio of a length of said channel from said high voltage electrode to said nozzle exit orifice of less than about 1.